

APPENDIX D MITIGATION ACTION ASSESSMENT MATRIX: REVIEW OF 2011 MITIGATION ACTIONS

REVIEW OF 2011 PROGRAMMATIC ACTIONS

Action	Description	Action Completed	Action Removed	Action Remains Valid	Comment
USVI-1	VITEMA to work with DPW to focus annual budget and priorities to remove built up sediment, debris and maintain natural guts, roadside ditches, drainage channels and storm drains in areas that are designated in this Plan as Repetitive Loss Mitigation Strategy (RLMS area).			X	
USVI-2	Publicize the availability of print material on hazard data and hazard mitigation tools to professional associations, interest groups, and the private sector.		X		VITEMA staff reductions and resource constraints necessitate removing this action over the next Plan Update cycle
USVI-3	Strengthen partnerships with the Office of the Governor and media to disseminate information to the general public on hazard mitigation programs and importance of reducing number of USVI repetitive loss properties			X	
USVI-3	Distribute and require the use of maps that were developed as part of the flood insurance study that delineate natural drainageways (guts) that exceed a specified cross-section or flow in cubic feet per second to appropriate DPNR and DPW staff responsible for development review or engineering design of flood drainage improvement works to prevent encroachment of new development or alteration of natural guts unless necessary for the correction of existing flooding problems.			X	
USVI-6	Construct a database management program and develop procedures to collect information on and to track repetitive loss properties in the Territory.			X	
USVI-7	Define and implement arrangements for the collection of data on Landslides that can affect the Territory, including information on location (maps), history, and probability of			X	USVI-7, USVI-8, and USVI-9 were combined into one programmatic action in the 2014 Plan Update

APPENDIX D MITIGATION ACTION ASSESSMENT MATRIX: REVIEW OF 2011 MITIGATION ACTIONS

Action	Description	Action Completed	Action Removed	Action Remains Valid	Comment
	hazard events.				
USVI-8	Define and implement arrangements for the collection of data on the Wildfire that can affect the Territory, including information on location (maps), history, and probability of hazard events.		X		See above
USVI-10	Define and implement arrangements for the collection of data on Drought that can affect the Territory, including information on location (maps), history, and probability of hazard events.		X		See above
USVI-11	Construct a database management program and develop procedures to track mitigation project progress and effectiveness from project award to project completion so as to provide a record on the aggregate actual costs avoided of implemented mitigation projects in the territory.			X	
USVI-12	Conduct follow-up activities to engage members of hazard mitigation committees in an annual review of planning and implementation activities under their agency's responsibility		X		Removed because this action was considered in the 2014 Plan Update as a necessary part of program implementation, not requiring a specific mitigation action (see discussion in Section 6 Plan Maintenance).
USVI-5	Develop conceptual retrofit or relocation mitigation projects, including preliminary cost estimates, for retrofitting or relocating essential infrastructure and critical facilities that can be undertaken following a future disaster event (primarily hazard mitigation funding sources – PDMC, HMGP, etc.).		X		Removed in the 2014 Plan Update due to VITEMA staff and resource constraints.
USVI-4	Develop worksheets for Government agency facility managers to gather relevant information necessary to support applications to seek federal hazard mitigation funding where appropriate.		X		Mitigation action removed because considered standard operating procedure for VITEMA not requiring a specific mitigation action.

APPENDIX D MITIGATION ACTION ASSESSMENT MATRIX: REVIEW OF 2011 MITIGATION ACTIONS

REVIEW OF 2011 ISLAND SPECIFIC ACTIONS, ST. THOMAS

Action	Description	Action Completed	Action Removed	Action Remains Valid	Comment
STT-23	Installation of High Impact Hurricane windows at the Department of Public Works (HMGP-1807).	X			
STT-22	Installation of High Impact Hurricane windows at the Department of Property and Procurement (HMGP-1807).	X			
STT-24	Installation of High Impact Hurricane windows at the Department of Education (HMGP-1807).	X			
STT-25	Installation of High Impact Hurricane windows at the Department of Human Services (HMGP-1807).	X			
STT-8	Construct drainage improvements on Turpentine Run (Brookman Road) to alleviate localized flooding.			X	
STT-9	Construct drainage improvements to improve the capacity of the drainage system by Yvonne Bowsky Elementary School (Peace Corp) to alleviate localized flooding.			X	
STT-10	Construct drainage improvements to improve the capacity, and clean, the storm water drainage system in Frydenhoj (next to and across from ball field) to alleviate localized flooding and damage of private property.			X	
STT-17	Resolve flooding problems at Subbase Entrance. Pursue Phase II drainage improvements which include the installation of properly-sized culverts from Bellows across Veterans Drive to connect to Phase I drainage improvements.			X	

APPENDIX D MITIGATION ACTION ASSESSMENT

MATRIX: REVIEW OF 2011 MITIGATION ACTIONS

STT-6	Construct drainage improvements on Rt. 30 adjacent to Bolongo Bay to alleviate flooding to residential areas and beach erosion.			X	
STT-13	Enlarge box culverts, stormdrains, and improvements to open channels from Veterans Drive to the Bay along the east edge of Frenchtown in southwest Charlotte Amalie (Frenchtown Drainage East), in order to resolve flooding, traffic access and business interruption, by providing 100-year flood protection.	X			
STT-11	Pursue the acquisition of land for the relocation of the Downtown Fire Station that is susceptible to storm surges and tsunami.		X		Current USVI Territory financial issues necessitate removing this action for the upcoming Plan Update cycle.
STT-7	Construct drainage improvements for major drainage channel that conveys flood waters from the surrounding Altona and Anna's Fancy areas to resolve recurrent flooding after heavy rainfall events.			X	
STT-12	Expand and reinforce communication infrastructure that is being implemented by BIT to mitigate damages from hurricanes to ensure rapid recovery and return to normal service.			X	
STT-21	Replace and improve drainage infrastructure at Food Center in order to resolve flooding of roads, businesses, while addressing potential secondary impacts to wetlands.			X	
STT-3	Pursue road reconstruction and drainage improvements to resolve recurrent shallow flooding on Radets Gade from Main Street to Veterans Drive that affect businesses.	X			
STT-1	Construct Lindberg Estates, Phase IV Drainage Project north through Kirwin Terrace Public Housing Units.			X	

APPENDIX D MITIGATION ACTION ASSESSMENT

MATRIX: REVIEW OF 2011 MITIGATION ACTIONS

STT-14	Implement drainage improvements to resolve the flooding problems at Coki Point and Smith Bay Roads, and, improvements to open channels draining through the Resort Complex into Water Bay (Smith Bay Basin) to resolve localized flooding problems that periodically close roads, create traffic hazards, prevent emergency vehicle and public access, and cause damage to adjacent businesses and road pavement.			X	Modified in the 2014 Plan Update to include a hydrological study to identify potential sub-basin mitigation measures.
STT-15	Construct drainage improvements to secondary road that provides access to Caret Bay West. Improvements could include paving and/or providing proper roadside drainage and properly-sized culverts where appropriate to carry stormwater across the road to minimize erosion of the road surface.			X	
STT-5	Improve drainage infrastructure along Rt. 30 Estate Hope / Fortuna to eliminate flooding of nearby residences in Fortuna 3C Subdivision.			X	
STT-18	Complete Installation of Hurricane Shutters at main police station in Charlotte Amalie.			X	
STT-19	Improve drainage infrastructure along Hospital Gade from Antonio Jarvis School to the Police Station on Verteran's Drive, paying particular attention to the intersection of Hospital and Kongens Gade (Moravian Church and Zoras).			X	
STT-20	Replace and improve drainage infrastructure along Rt. 33 (Estate Dorethea).			X	
STT-2	Pursue road reconstruction and drainage improvements to resolve recurrent flooding on Commandant Gade Gut (Garden Street) from Bunker Hill to Veterans Drive that affect businesses and emergency access.			X	

APPENDIX D MITIGATION ACTION ASSESSMENT MATRIX: REVIEW OF 2011 MITIGATION ACTIONS

STT-4	Pursue road reconstruction and drainage improvements to resolve recurrent shallow flooding on Storre Tvaer Gade from Main Street to Veterans Drive that affect businesses.	X			
STT-16	Harden WAPA Substations. Design and construction of hardened switchgear buildings at the East End and Tutu Substations.			X	

APPENDIX D MITIGATION ACTION ASSESSMENT MATRIX: REVIEW OF 2011 MITIGATION ACTIONS

REVIEW OF 2011 ISLAND SPECIFIC ACTIONS, ST. CROIX

Action	Description	Action Completed	Action Removed	Action Remains Valid	Comment
STX-17	Install storm shutters at the American Red Cross (HMGP-1807).	X			
STX-18	Install storm shutters Emile Henderson, Sr. Fire Station (HMGP-1807).	X			
STX-19	Install Roll-Up Doors at the Rencelier I. Gibbs Fire Station (HMGP-1807).	X			
STX-21	Install Fabric Shutter system at Henry E. Rohlsen Airport (HMGP-1807).	X			
STX-20	Implement and improve storm water drainage infrastructure to relieve flooding at the Alfredo Andrews School and adjacent low-lying areas.			X	
STX-10	Resolve flooding problems and improve storm water drainage infrastructure in the "Grove at La Reine".			X	
STX-9	Conduct a hydrological study of the St. Croix watersheds with particular attention given to the La Grange, Prosperity, Bethlehem and Salt River watershed basins. Attention should focus on upgrading inadequate drainage systems focused on reducing the impact of flooding.			X	
STX-3	Perform assessment of flooding problems within La Grande Princess Estate. Approximately 50 of 250 NFIP-insured losses in St. Croix (one in five repetitive losses) occur in La Grande Princess. Eighty two properties were identified as being in the 100 year flood plain and the potential for acquisition, structural solutions, and nonstructural control measures to reduce repetitive losses to residences should be assessed.			X	
STX-15	Improve Recovery Hill Water Storage Tanks. Install wind girders to reinforce against hurricane storm winds.			X	
STX-7	Improve drainage system to along Melvin H. Evans Highway in the area west of Williams Delight Stop Light and Carlton. Extend drainage system to connect with drainage			X	

APPENDIX D MITIGATION ACTION ASSESSMENT MATRIX: REVIEW OF 2011 MITIGATION ACTIONS

Action	Description	Action Completed	Action Removed	Action Remains Valid	Comment
	improvements in Williams Delight Community.				
STX-14	Conduct feasibility study and implement and provide emergency power generator units for all pumping stations on St. Croix.			X	
STX-4	Conduct a hydrological study of the Christiansted watershed or catchment area with particular attention given to the sub-watersheds of Spring Gut and Water Gut to determine technically feasible and cost effective structural solutions to address the flooding problem in Christiansted.			X	
STX-5	Resolve flooding problems and improve stormwater drainage infrastructure for "Spring Gut" all the way to Gallows Bay.			X	
STX-6	Resolve flooding problems and improve stormwater drainage infrastructure for Tide Village by implementing a low water crossing to divert surface run-off into the natural gut.			X	
STX-11	Pursue equipment anchoring program for the Richmond Electrical Generating Plant. Anchor critical equipment in the Plant to mitigate damages caused by earthquake, hurricane-strength winds, tsunami and storm surge.			X	
STX-16	Improve Various Water Storage Tanks throughout the island. Install flexible connectors at multiple water storage tanks to permit pipe flexibility during earthquake events and ensure rapid recovery and normal service.			X	
STX-1	Pursue Christiansted Gut USACE Section 205 Project. Preliminary feasibility phase currently underway by the Corps to determine whether technically feasible and cost effective solutions exist to reduce flood damages in residential and business areas adjacent to King Cross Street.			X	
STX-8	Construct a retention pond at the property line of White Bay and the National Park Service reserve within the localized depression.			X	

APPENDIX D MITIGATION ACTION ASSESSMENT MATRIX: REVIEW OF 2011 MITIGATION ACTIONS

Action	Description	Action Completed	Action Removed	Action Remains Valid	Comment
STX-12	Construct drainage improvements at the Ricardo Richards Elementary School at Estate Barren Spot near Melvin H. Evans Highway (Route 66).			X	
STX-13	Improve Water Distribution Pump Stations at Concordia and Adventure.			X	
STX-2	Perform assessment of adjacent drainage basins that flow into Estate Williams Delight to identify alternate routing of surface runoff.			X	Modified in the 2014 Plan Update to include consideration of a stormwater detention pond below Blue Mountain.

APPENDIX D MITIGATION ACTION ASSESSMENT MATRIX: REVIEW OF 2011 MITIGATION ACTIONS

REVIEW OF 2011 ISLAND SPECIFIC ACTIONS, ST. JOHN

Action	Description	Action Completed	Action Removed	Action Remains Valid	Comment
STJ-10	Install Storm shutters at the DeCastro Health Clinic (HMGP 1807)	X			
STJ-11	Conduct a hydrological study of Coral Bay watershed to propose technically feasible and cost-effective solutions to flooding problems in Coral Bay.			X	
STJ -12	Clean Gut at Westin Hotel	X			
STJ-6	Provide an alternate power generation substation for Coral Bay to ensure that there is power source or all public services and critical facilities on the east end of the island.			X	
STJ-5	Increase fuel capacity of the Myra Keating Health Clinic Emergency power generator unit.			X	
STJ-1	Construct drainage improvements to eliminate localized flooding at the lower end of "Carolina Gut" at Little Plantation (Across from Dominos Gas Station) where natural storm flows in the catchment area have been altered by construction and improper siting of structures.			X	
STJ-2	Construct drainage improvements to eliminate localized flooding at Pond Mouth at intersection of Rt. 102 and Rt. 105.			X	
STJ-4	Implementing a slope stabilization program to reduce damage and blockage of roads during wind storm and flooding events. A program establishment of more stable and cut and fill slopes, removal of material that may be subject to landslide and rock fall events, re-vegetation, of disturbed slopes, etc. Area of concern: Bordeaux Mountain Road and Centerline Road (Between Mile 6 and Mile 7 and (Between Reef Bay and Mile 5)) that periodically closes the road during major storm events.			X	

APPENDIX D MITIGATION ACTION ASSESSMENT MATRIX: REVIEW OF 2011 MITIGATION ACTIONS

Action	Description	Action Completed	Action Removed	Action Remains Valid	Comment
STJ-9	Construct underground feeders from the St. John substation to various termination points within Cruz Bay to mitigate damages to hurricane winds and ensure rapid recovery and return to normal service.			X	
STJ-7	Improve drainage infrastructure (Box Culverts) at WAPA building and treatment plant, while addressing potential secondary impacts to wetlands.			X	
STJ-3	Construct drainage improvements to eliminate localized flooding along Route 20 southbound in Coral Bay (Estate Carolina).			X	
STJ-8	Coordinate with the National Park Service for the construction of appropriate drainage system improvements to eliminate localized flooding along Route Rt. 20 in Maho Bay.			X	